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R. E. TWOHIG
ARTICLE HOLDING CLAMP
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Fig. 1

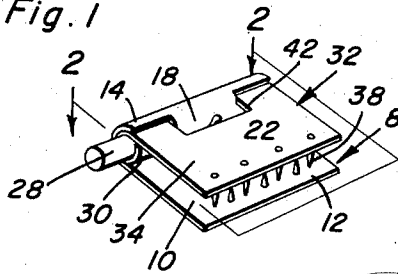


Fig. 2

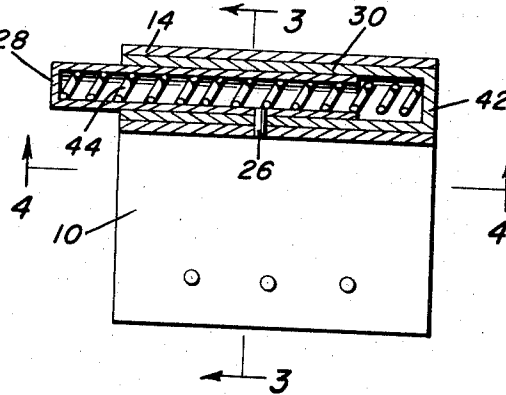


Fig. 3

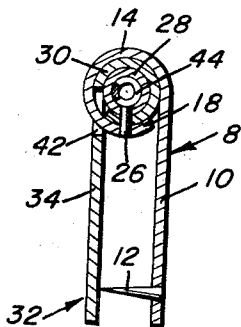


Fig. 4

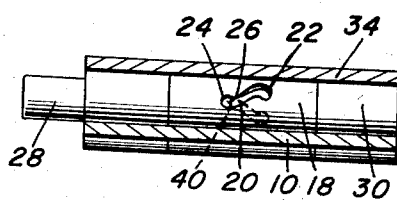


Fig. 5

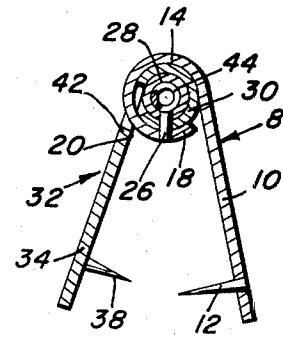


Fig. 7

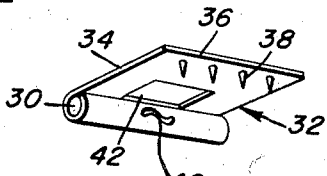
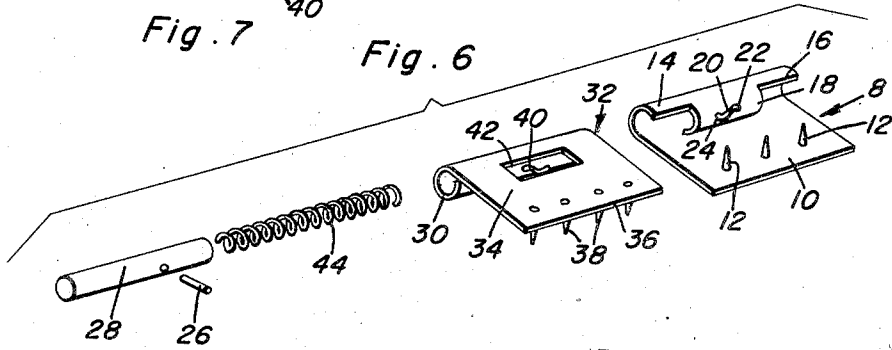


Fig. 6



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2,856,660

ARTICLE HOLDING CLAMP

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2 Claims. (Cl. 24—67)

The present invention relates to new and useful improvements in holders, generally speaking, and has more particular reference to one which serves to grip and clamp sheets of paper, articles of stationery, cloth and the like together in systematic and readily accessible and usable form.

More specifically, the invention pertains to a clamp which takes the form of a spring-type butt or similar hinge, the same being characterized by a pair of flat leaves or plates having adjacent edges hingedly connected by a knuckle joint, the leaves being normally pressed together under the influence and action of a coil spring and having suitably arranged gripping elements, such as spurs, which may penetrate the sheets of paper in a manner to keep the same in tablet-like arrangement.

An object of the invention is to structurally, functionally and otherwise improve upon similarly constructed and performing hinge-like article clamps and, in so doing, to provide a construction in which manufacturers will find their manufacturing requirements and economies satisfactorily taken care of and users will find their everyday filing and similar office needs effectually met.

In carrying out a preferred embodiment of the invention the knuckle joint is novelly constructed in that it comprises exposed plates having inner and outer tubular knuckles nested together in hinging and connecting relationship, the outer one of said knuckles having a projecting tongue formed with an S-shaped cam slot into which an actuating and camming pin projects and slides from end to end, said pin being carried by a plunger mounted for reciprocation in the inner knuckle.

Other objects, features and advantages will become more readily apparent from the following description and the accompanying sheet of illustrative, but not restrictive, drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the views:

Fig. 1 is a perspective view of a clamp constructed in accordance with the principles of the present invention;

Fig. 2 is an enlarged view partly in section and partly in elevation taken on the plane of the line 2—2 of Fig. 1;

Figs. 3 and 4 are sections on the lines 3—3 and 4—4 respectively of Fig. 2;

Fig. 5 is a view similar to Fig. 3 but showing the jaw-like plates or leaves spread apart;

Fig. 6 is an exploded perspective view showing all of the components which go to make up the improved clamp; and

Fig. 7 is a perspective view of one of the hinge plates or parts by itself.

Referring now to the drawings and for example to Fig. 6 one component is denoted by the numeral 8 and this comprises a substantially flat leaf or plate 10 of general rectangular form having penetrating and retaining prongs or spurs 12 thereon. Obviously, however, these spurs may be otherwise constructed to serve the intended article penetrating and retaining purpose. Along the opposite longitudinal edge there is a substantially semi-

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circular or semi-cylindrical bend 14 which here constitutes the outer knuckle. Along its edge 16 it is provided with an arcuately bent extension or tongue 18 provided with a cam slot 20. This slot may be said to have a slow curve with its end or terminal portions 22 and 24 providing what constitute keeper seats at the ends and which accommodate the camming or operating pin 26 on the manually actuatable reciprocable plunger 28. This plunger is mounted for sliding in inner tubular knuckle 30 on the second component 32. The latter comprises a substantially rectangular plate 34 which is similar to the plate 10 and which is opposed thereto and which is provided along the edge 36 with gripping elements or spurs 38. The bend providing the knuckle is such in cross-section and proportion that it is journaled for oscillation in the knuckle 14. The outer knuckle 14 may be conveniently called a bearing and the inner knuckle 30 a hinge pintle. The intermediate portion of the inner knuckle 30 is provided with a cam slot 40 register with the cooperating cam slot 20 in tongue 18. Also, the plate 34 has a rectangular opening 42 of appropriate dimension therein to permit passage of the tongue 18. Thus the tongue 18 extends through the opening and cooperates with the cam slot 40 and the knuckle 30 to provide the assemblage seen. The slot 40 permits the pin 26 to pass therethrough for clearance and to fit operatively into the companion S-shaped cam slot 20. It will be noticed in Fig. 2 that the right hand end of the inner knuckle 30 is closed at 44 to retain one end of the expansion-type coil spring 44. The spring is housed primarily in the hollow plunger 28. The spring exerts a tension in a direction to normally project the plunger to the position shown in Figs. 1, 2, 3 and 4 which means, of course, that the jaw-like plates are therefore normally spring biased to and held in closed position. However, by manually pressing on the plunger against the tension of the spring, in an obvious manner, the pin 26 cooperates with the tongue 18 and cam slots in a manner to convert the reciprocation of the plunger into rotary motion for the plate 10.

The invention provides a simple, economical and practical hinge-like article holding clamp which is mechanically operable but manually controllable. It provides a construction which, it is believed, aptly serves the purposes for which it is intended. It is therefore thought to constitute an advance in the art to which it relates.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. An article holding clamp comprising a pair of companion plates provided on inner opposed surfaces with article penetrating, gripping and retaining elements, one plate being provided along one marginal edge with a co-extension bent portion defining an outer hinging knuckle, the other plate being provided along a corresponding marginal edge with a co-extensive inner knuckle, said inner knuckle being nested for angular rotation in said outer knuckle and being provided in its median portion with a cam slot and also being closed at one end and open at the opposite end, a coil spring located in said inner knuckle and bearing at one end against said closed end, a hollow plunger telescoping into and slidable in said inner knuckle, an adjacent portion of said spring projecting into said plunger, said first named outer knuckle being provided with a tongue, said second named plate having an opening therein and said tongue extending through said

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opening into and conforming with and contacting said inner knuckle, said tongue having a cam slot registering with the first named cam slot, and said plunger being provided with a lateral pin fixed at one end to the plunger and having its opposite end extending through the cam slots.

2. An article holding clamp comprising a pair of opposed companion plates having article penetrating and gripping elements on their opposed inner faces, corresponding edges of said plates having an inner tubular knuckle confined and mounted for rotation within an outer tubular knuckle, the respective knuckles having registering cam slots, a plunger mounted for reciprocation in said inner knuckle and having one end normally projecting beyond adjacent ends of both of said knuckles where it is thus adapted to be manually pressed, said plunger being provided intermediate its ends with an outstanding fixedly mounted pin and said pin being extended through and being simultaneously cooperatable with the

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cam slots, said inner knuckle being elongated and of a length corresponding to the length of the plate which carries it, said inner knuckle being closed at one end, and open at the opposite end, said plunger being of hollow form, and a coil spring having a portion confined in the hollow portion of said plunger, and having another portion confined and operable in said inner knuckle and in engagement with the closed end of said inner knuckle.

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